

COMPRESSOR DEFINITION

| | |
|---------------------------|-----------------|
| Designation | EM I90UEX |
| Nominal Voltage/Frequency | 115-127 V 60 Hz |
| Engineering Number | 513307321 |

A - APPLICATION / LIMIT WORKING CONDITIONS

| | | | |
|------------------------------------|-----------------------------------|-----------------------------------|-------------|
| 1 Type | Hermetic reciprocating compressor | | |
| 2 Refrigerant | R-290 | | |
| 3 Nominal voltage and frequency | 115-127 / 60 | [V / Hz] | |
| 4 Application type | Low-Medium Back Pressure | | |
| 4.1 Evaporating temperature range | -35°C to -5°C | (-31°F to 23°F) | |
| 5 Motor type | CSIR | | |
| 6 Starting torque | HST - High starting torque | | |
| 7 Expansion device | Capillary tube or Expansion valve | | |
| 8 Compressor cooling | | Operating voltage range | |
| | | 50 Hz | 60 Hz |
| 8.1 LBP (32°C Ambient temperature) | Fan | - | 98 to 140 V |
| 8.2 LBP (43°C Ambient temperature) | Fan | - | 98 to 140 V |
| 8.3 HBP (32°C Ambient temperature) | - | - | - |
| 8.4 HBP (43°C Ambient temperature) | - | - | - |
| 9 Maximum condensing temperature | | | |
| 9.1 Operating | 18.4 | [kgf/cm ²] (262 psig) | / °C - °F |
| 9.2 Peak | 20.6 | [kgf/cm ²] (293 psig) | / °C - °F |
| 10 Maximum winding temperature | 130 | [°C] | |

B - MECHANICAL DATA

| | | |
|-------------------------------|-----------------|----------------------------------|
| 1 Commercial designation | 1/4+ | [hp] |
| 2 Displacement | 4.99 | [cm ³] (0.305 cu.in) |
| 2.1 Bore [mm] | 21.000 | |
| 2.2 Stroke [mm] | 14.400 | |
| 3 Lubricant charge | 160 | [ml] (5.41 fl.oz.) |
| 3.1 Lubricants approved | | |
| 3.2 Lubricants type/viscosity | ALQUILB / ISO32 | |
| 4 Weight (with oil charge) | 8.09 | [kg] (17.84 lb.) |
| 5 Nitrogen charge | - | [kgf/cm ²] |

C - ELETRICAL DATA

| | | |
|--|------------------------------------|------------------------------------|
| 1 Nominal Voltage/Frequency/Number of Phases | 115-127 V 60 Hz 1 ~ (Single phase) | |
| 2 Starting device type | Current Relay | |
| 2.1 Starting device | 213515293 | |
| 3 Start capacitor | 189-227(180) | [µF(VAC minimum)] |
| 4 Run capacitor | - | [µF(VAC minimum)] |
| 5 Motor protection | MSP36ALK-5590 | |
| 6 Start winding resistance | 5.70 | [Ω at 25°C (77°F)] +/- 8% |
| 7 Run winding resistance | 2.60 | [Ω at 25°C (77°F)] +/- 8% |
| 8 LRA - Locked rotor amperage (60 Hz) | 23.00 | [A] - Measured according to UL 984 |
| 9 FLA - Full load amperage L/MBP (60 Hz) | 4.00 | [A] - Measured according to UL 984 |
| 10 FLA - Full Load Amperage HBP (60 Hz) | 4.50 | [A] - Measured according to UL 984 |
| 11 Approval boards certification | CE - ISI - UKCA - UL | |

D - PERFORMANCE - CHECK POINT DATA

| | | | | | | | | |
|-------------------------------|----------|-----|--------------------------------|----------------------------------|--|---------------------------|--|-------|
| TEST CONDITIONS: @115V60Hz | | | ASHRAELBP32 Fan | | Evaporating temperature (Condensing temperature | | -23.3°C (-9.94°F) 54.4°C (129.92°F) | |
| Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| 947 | 239 | 277 | 203 | 2.94 | 2.82 | 4.67 | 1.18 | 1.37 |

E - PERFORMANCE - CURVES

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|-----|---------------------------------------|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @115V60Hz | | | ASHRAE32 Fan | | (Condensing temperature 35°C (+95°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 625 | 157 | 183 | 145 | 2.67 | 1.85 | 4.31 | 1.09 | 1.26 |
| -30 | (-22) | 816 | 206 | 239 | 160 | 2.72 | 2.42 | 5.05 | 1.27 | 1.48 |
| -25 | (-13) | 1001 | 252 | 293 | 173 | 2.77 | 2.98 | 5.76 | 1.45 | 1.69 |
| -20 | (- 4) | 1201 | 303 | 352 | 185 | 2.83 | 3.58 | 6.48 | 1.63 | 1.90 |
| -15 | (+ 5) | 1437 | 362 | 421 | 198 | 2.89 | 4.31 | 7.27 | 1.83 | 2.13 |
| -10 | (+14) | 1731 | 436 | 507 | 211 | 2.96 | 5.21 | 8.19 | 2.06 | 2.40 |
| -5 | (+23) | 2103 | 530 | 616 | 227 | 3.06 | 6.36 | 9.28 | 2.34 | 2.72 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|-----|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @115V60Hz | | | ASHRAE32 Fan | | (Condensing temperature 45°C (+113°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 569 | 143 | 167 | 152 | 2.72 | 1.68 | 3.73 | 0.94 | 1.09 |
| -30 | (-22) | 751 | 189 | 220 | 170 | 2.78 | 2.23 | 4.38 | 1.10 | 1.28 |
| -25 | (-13) | 928 | 234 | 272 | 186 | 2.84 | 2.76 | 4.98 | 1.25 | 1.46 |
| -20 | (- 4) | 1122 | 283 | 329 | 201 | 2.91 | 3.35 | 5.59 | 1.41 | 1.64 |
| -15 | (+ 5) | 1353 | 341 | 397 | 216 | 2.99 | 4.05 | 6.26 | 1.58 | 1.84 |
| -10 | (+14) | 1643 | 414 | 481 | 233 | 3.08 | 4.94 | 7.05 | 1.78 | 2.07 |
| -5 | (+23) | 2013 | 507 | 590 | 252 | 3.21 | 6.09 | 8.00 | 2.02 | 2.35 |

| | | | | | | | | | | |
|-------------------------------|-------|----------------------------|-----------------|-----|--|----------------------------------|----------------------------|---------------------------|-----------|-------|
| TEST CONDITIONS: @115V60Hz | | | ASHRAE32 Fan | | (Condensing temperature 55°C (+131°F)) | | | | | |
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 509 | 128 | 149 | 156 | 2.74 | 1.51 | 3.27 | 0.82 | 0.96 |
| -30 | (-22) | 683 | 172 | 200 | 177 | 2.81 | 2.03 | 3.84 | 0.97 | 1.13 |
| -25 | (-13) | 854 | 215 | 250 | 196 | 2.88 | 2.54 | 4.36 | 1.10 | 1.28 |
| -20 | (- 4) | 1042 | 263 | 305 | 214 | 2.96 | 3.11 | 4.89 | 1.23 | 1.43 |
| -15 | (+ 5) | 1270 | 320 | 372 | 233 | 3.07 | 3.80 | 5.46 | 1.38 | 1.60 |
| -10 | (+14) | 1557 | 392 | 456 | 253 | 3.19 | 4.68 | 6.14 | 1.55 | 1.80 |
| -5 | (+23) | 1926 | 485 | 564 | 276 | 3.35 | 5.82 | 6.98 | 1.76 | 2.04 |

E - PERFORMANCE - CURVES

| TEST CONDITIONS: @115V60Hz | | ASHRAE32 Fan | | | (Condensing temperature 65°C (+149°F)) | | | | | |
|-------------------------------|-------|----------------------------|----------|-----|---|-------------------------------|-------------------------|---------------------------|-----------|-------|
| Evaporating temperature | | Cooling capacity +/- 5% | | | Power consumption +/- 5% | Current consumption +/- 5% | Gas flow rate +/- 5% | EFFICIENCY RATE +/- 7% | | |
| °C | (°F) | [Btu/h] | [kcal/h] | [W] | [W] | [A] | [kg/h] | [Btu/Wh] | [kcal/Wh] | [W/W] |
| -35 | (-31) | 455 | 115 | 133 | 159 | 2.74 | 1.35 | 2.86 | 0.72 | 0.84 |
| -30 | (-22) | 623 | 157 | 182 | 183 | 2.82 | 1.85 | 3.39 | 0.85 | 0.99 |
| -25 | (-13) | 788 | 199 | 231 | 205 | 2.92 | 2.34 | 3.85 | 0.97 | 1.13 |
| -20 | (- 4) | 972 | 245 | 285 | 227 | 3.03 | 2.90 | 4.31 | 1.09 | 1.26 |
| -15 | (+ 5) | 1197 | 302 | 351 | 250 | 3.16 | 3.58 | 4.81 | 1.21 | 1.41 |
| -10 | (+14) | 1483 | 374 | 435 | 274 | 3.32 | 4.46 | 5.40 | 1.36 | 1.58 |
| -5 | (+23) | 1852 | 467 | 543 | 301 | 3.52 | 5.60 | 6.15 | 1.55 | 1.80 |

F - EXTERNAL CHARACTERISTICS

| | | | |
|-------------------------|-------------------------------|------|--------------------------|
| 1 Base plate | Universal EG/F/AMEM version 2 | | |
| 2 Tray holder | No | | |
| 3 Connectors | | | |
| 3.1 SUCTION | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.1.1 Material | Copper | | |
| 3.1.2 Shape | Straight | | |
| 3.2 DISCHARGE | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.2.1 Material | Copper | | |
| 3.2.2 Shape | Slanted | | |
| 3.3 PROCESS | 6.5 +0.12/-0.08 | [mm] | (0.256" +0.005"/-0.003") |
| 3.3.1 Material | Copper | | |
| 3.3.2 Shape | Straight | | |
| 3.4 Oil cooler (Copper) | No | [mm] | |
| 3.5 Connector sealing | Rubber Plugs | | |